

WHAT IS CLAIMED IS:

1 *IND 417* 1. A method of billing service in an electronic switch in a cellular network,
2 comprising the steps of:

3 setting a time when a service initiation request or a service resumption request is
4 generated as a service start time and initiating a call ;

5 setting a service suspension request time as a service end time upon generation of a
6 service suspension request during the service and suspending the service;

7 sending billing data including the service start time and the service end time in the
8 service suspended state, and determining whether a service resumption request is generated;

9 and

= hold time or failure time

10 ending the service when a service termination request is generated in the service
11 suspended state.

12 2. The billing method of claim 1, wherein the service initiation request is
2 generated when an outgoing call is answered.

1 3. The billing method of claim 1, wherein the service initiation request is
2 generated when an incoming call is answered.

1 4. The billing method of claim 1, wherein the service suspension signal is sent by
2 a BSC to notify that frames are not normally transmitted.

1 5. The billing method of claim 1, wherein the service resuming signal is sent by
2 the BSC to notify that a frame transmission resumes.

1 6. The billing method of claim 2 wherein the service termination request is
2 generated from one of two subscribers in communication.

1 7. The billing method of claim 3, wherein the service termination request is
2 generated from one of two subscribers in communication.

1 8. A method of billing service in an electronic switch in a cellular network,
2 comprising the steps of:

3 calculating a service suspended period whenever a service suspension occurs during
4 a service and accumulating service suspended periods; and

5 constructing billing data, including a final service suspended period being the
6 accumulated value of service suspended periods and sending the billing data to a billing
7 processor, when the service ends.

1 9. The billing method of claim 8, wherein the service suspended period is the
2 difference between a service suspension start time and a service resuming time.

1 10. The billing method of claim 9, wherein the service suspended period is the
2 difference between the service suspension start time and a service end time.

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11. A method of billing service in an electronic switch in a cellular network, comprising the steps of:

calculating a service suspended period whenever a service suspension occurs during a service and storing the service suspended period according to a unique index; and

constructing billing data including stored service suspended periods and sending the billing data to a billing processor, when the service ends.

12. The billing method of claim 11, wherein the service suspended period is the difference between a service suspension start time and a service suspension end time, wherein the service suspension end time is a service resuming time.

13. The billing method of claim 12, wherein the service suspension end time is a service end time.

14. The billing method of claim 13, wherein the service suspension start time and the service suspension end time are stored according to different indexes.

15. The billing method of claim 11, wherein the billing data further includes the number of service suspension occurrences.

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16. A method of billing service in an electronic switch in a cellular network, comprising the steps of:

setting a service initiation request time upon request for call initiation and initiating a call;

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5 setting a service suspension request time as a service suspension start time upon
6 request for service suspension and suspending the service;

7 setting a service resumption request time as a service suspension end time upon request
8 for service resumption in the service suspended state, calculating a service suspended time
9 from the service suspension start time and the service suspension end time, adding the
10 calculated service suspended period to a previous service suspended period, and resuming the
11 service;

12 setting a service termination request time as a service end time upon request for service
13 termination in the service suspended state, calculating a service suspended time from the
14 service suspension start time and the service end time, adding the calculated service suspended
15 period to a previous service suspended period, and resuming the service; and

16 sending billing data including the service start time, the service end time and a final
17 accumulated service suspended time to a billing processor, and ending the service.

18 17. The billing method of claim 16, wherein the service suspension signal is sent
19 by a BSC to notify that frames are not normally transmitted.

20 18. The billing method of claim 16, wherein the service resuming signal is sent by
21 the BSC to notify that a frame transmission resumes.

22 19. The billing method of claim 16, wherein the service suspended period is the
23 difference between the service suspension start time and the service suspension end time.

1 20. The billing method of claim 19, wherein the service suspended period is the
2 difference between a service suspension start time and the service end time.

1 21. A method of billing service in an electronic switch in a cellular network,
2 comprising the steps of:

3 designating a unique index upon request for service suspension during a service, setting
4 a service suspension request time as a service suspension start time according to the unique
5 index, and suspending the service;

6 designating a unique index upon request for service resumption in the service
7 suspended state, setting a service resumption request time as a service suspension end time
8 according to the unique index, and resuming the service;

9 designating a unique index upon request for service termination in the service
10 suspended state, and setting a service termination request time as a service suspension end
11 time according to the unique index; and

12 constructing billing data including the service suspension start time and the service
13 suspension end time, sending the billing data to a billing processor, and ending the service.

1 22. The billing method of claim 21, wherein the billing data further includes the
2 number of service suspension occurrences.

1 23. A billing method in an electronic switch in a cellular network, comprising the
2 steps of:

3 counting the number of service/suspension occurrences generated during a service,
 4 constructing billing data including the count value, and sending the billing data to a billing
 5 processor, via a call processor; and

6 producing a total service suspended period by multiplying the number of service
 7 suspension occurrences by an average service suspended period, subtracting the total service
 8 suspended period from an overall service period, and billing a subscriber for a resulting normal
 9 service period.

1 24. A billing method in an electronic switch, comprising the steps of:
 2 calculating a service suspended period during a service in progress; and
 3 billing a subscriber for a normal service period resulting from subtracting the
 4 calculated service time period from an overall service period.

1 25. The billing method of claim 24, wherein the service suspended period is the
 2 difference between a service suspension request time and a service resuming request time
 3 during a service in progress.

1 26. The billing method of claim 25, wherein the overall service period is the
 2 difference between a service initiation request time and a service termination request time.